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Lecanora pallescens (L.), Schær. Sheep Creek, near Juneau.

Lecanora pallescens (L.), Schær., var. *rosella*, Tuck. Sheep Creek, Juneau.

Stereocaulon tomentosum (Fr.), Th. Fr. Sheep Creek, near Juneau; Davidson Glacier.

Pilophorus cereolus (Ach.), var. *acicularis*, Tuck. Juneau, 3,000 ft.; Salmon Creek and Gold Creek Cañon, near Juneau.

Cladonia mitrula, Tuck. Juneau.

Cladonia fimbriata (L.), Fr. Loring; also a doubtful form from Sheep Creek, Juneau.

Cladonia fimbriata (L.), Fr., var. *tubiformis*, Fr. Sheep Creek, Juneau.

Cladonia squamosa, Hoffm. Sheep Creek, Juneau; also at Nanaimo, B. C.

Cladonia rangiferina (L.), Hoffm. Salmon Creek and Sheep Creek, near Juneau.

Cladonia rangiferina (L.), Hoffm., var. *sylvatica*, L. Salmon and Sheep Creek, near Juneau.

Cladonia macilenta (Ehrh.), Hoffm. Loring.

Bæomyces æruginosus (Scop.), DC. Loring; Salmon Creek, near Juneau.

Heterothecium sanguinarium (L.), Flot. Juneau; also at Sheep Creek near Juneau.

Sphaerophorus globiferus (L.), DC. Loring; also at Salmon Creek, near Juneau.

My thanks are due to Mrs. Britton, for assistance in naming some of the mosses, and to Prof. A. B. Seymour, for his kindness in comparing some of the lichens in the Tuckerman Herbarium.

CLARA E. CUMMINGS.

An Enumeration of Some Rare North American Lichens.

BY DR. J. W. ECKFELDT.

The following list of species is intended to embrace some plants that are but little known to the botanists of North America, and in order to illustrate them better than by a simple list of names, I herewith give the general description from plants in my herbarium, hoping thereby to render them better understood by those who are pursuing the study of lichenology. The lichens, to which I have here referred, are all of the Graphidacei, with two exceptions. From the special interest that I have taken in these plants, I consider them worthy to be brought into notice for the benefit of those who may be collecting in the neighborhood where they were found.

PLACODIUM APHANOTRIPTA (Nyl.), Eck. Thallus effuse granulose, made up of very minute ascendant lobules, which are closely crowded into a uniform crust, supporting a delicate light blue hypothallus, grayish green, tending to a brighter yellow. Apothecia 0.5 mm., scattered, small and flattened, concave, mostly sunken or slightly raised above the surface of the thallus, the bright orange disk with a crenulate or wavy margin, which is

thickened and paler in color. Spores broadly ellipsoid, polar bilocular, $\frac{1.8}{3} - \frac{1.9}{4}$ mic. Reaction with potash bright red.

Upon bark of various trees in the mountain regions, Monterey, Mexico; Mr. C. G. Pringle. A very fine and beautiful species belonging to the stock of *Callopisma*. (*Lecanora aphanotripta*, Nyl. Lich. Japonicæ, 104).

BUELLIA AMPHOREA (Tek.), Eck. Thallus mostly contiguous, disposed in broad, irregular patches, from smoothish to finely granulose, gradually becoming thin on the margin, supported by a delicate bluish hypothallus, from ashy green assuming a pale yellow color. Apothecia scattered, diffiform, elevated, from reddish brown to very black, concave, disk pale, surmounted by a thick rugose thalline margin. Spores oblong-ellipsoid, brown, bilocular $\frac{1.0}{5} - \frac{1.2}{6}$ mic.

On various barks, mountains near Monterey, Mexico. Mr. C. G. Pringle, No. 112. This species has most likely been quite unnoticed, and from the general characters referred to a closely allied species, *B. parasema*. (*Lecidea amphora*, Tek.).

OPEGRAPHA MESOPHLABIA, Nyl. Thallus membranous, slightly roughened, uneven, delicately wrinkled and tartrous, expanding uniformly into a regular crust, from pale brown becoming olivaceous and fading into an ashy shade. Apothecia brown, simple, becoming tortulose, and assuming no regular system, being stout and rather prominent, convex supported by a paler thalline border. Spores broadly ellipsoid or sub-fusiform, quadrilocular, brown, $\frac{1.6}{4} - \frac{2.0}{5}$ mic.

Usually upon rough barks in the neighborhood of San Luis Potosi, Mexico. Mr. C. G. Pringle, No. 230. This beautiful species, so far as I am aware, occurs only in the region specified.

OPEGRAPHA MICROBLEPHIA, Nyl. Thallus smooth but somewhat granulose, indistinctly obscured by the numerous apothecia, from pale ashy to dull white, dispersed irregularly over contracted areas. Apothecia wavy and irregular, frequently anastomosing and branched, diffiform and moderately elevated, concave with an incurved, thalline margin. Spores broadly dactyloid, quadrilocular, brown, $\frac{1.1}{4} - \frac{1.2}{5}$ mic.

On the bark of *Quercus*, in the mountains of Monterey, Mexico, Mr. C. G. Pringle. This rare species has probably escaped notice, yet the general aspect which it bears, and the slight resemblance to other species, make the type distinct.

OPEGRAPHA SCAPHELLA, Nyl., var. GEMELLA (Esch.), Thallus contiguous, very thin, membranous, smooth and shining as occurring in narrow patches, circumscribed by an irregular border which finally becomes indeterminate, from whitish passing into a brown, where it frequently becomes obsolete. Apothecia very small, black and scattered, mostly straight. Spores broadly ellipsoid, and more or less tapering at one end, bilocular, decolorate, $\frac{1}{3}^4 - \frac{1}{5}^6$ mic.

This plant was first found by Mr. H. A. Green, from whom I received the specimens, on the bark of *Hamamelis Virginica*, at Crowders Mountain, N. C., (*Melaspilea gemella*, Esch.).

GRAPHIS TENELLA, Ach. Thallus membranous, thin and slightly roughened, spreading and circumscribed by a well-developed and prominent brown band of an extended hypothallus, from white or tawny ash-color verging into a pale olive. Apothecia simple, irregular and frequently broken, elevated and very prominent and convex, brown. Spores ellipsoid to sub-fusiform, pale brown, 5-6-locular, $\frac{1}{4}^8 - \frac{2}{5}^0$ mic.

So closely related is this plant to *G. scripta* that I have seen it distributed under that name, but the tropical origin, as well as other peculiarities, are convincing that the plant is truly distinct. It occurs on barks at San Luis Potosi, Mexico, Mr. C. G. Pringle, No. 168.

GRAPHIS EGENA, (Nyl.). Thallus much as in *G. nitida* but often of an olivaceous yellow, thin membranous, opaque, quite smooth, frequently broken by transverse fissures. Apothecia poorly developed, scattered, simple, and represented by small, white, mealy lines, which soon become expanded, exhibiting a darker surface within. Spores broadly ellipsoid, bilocular, each containing one cell, $\frac{1}{3}^4 - \frac{1}{5}^5$ mic. Reaction red.

This plant belonging to the section *Fissurina*, may readily be misunderstood, yet the characters are such as to render it less misleading if found in well developed conditions. On barks, San Luis Potosi, Mexico. Mr. C. G. Pringle, No. 192. (*Fissurina egena*, Nyl.).

GRAPHIS ADSCRIBENS, Nyl. Thallus membranous, thinish, smooth and shining with a somewhat uneven surface, from pale ash to a greenish gray. Apothecia simple, small, narrow and flexuous, more or less sunken or at length even with the surface or hidden, sessile. Thecae cylindrical, spores ellipsoid, decolor-

ate $\frac{1.8}{6}$ - $\frac{1.9}{7}$ mic., spore cells six, a larger one at one end. Reaction with potash, yellow.

This plant has a general southern range, extending from the low sections of Florida to Mexico, where it is common in the neighborhood of San Luis Potosi. Mr. Calkins and C. G. Pringle.

GRAPHIS BALBISII, Nyl. Thallus uneven, granulose to minutely papillose, broken by fissures into a somewhat irregular crust, from ash-color to a delicate yellow. Apothecia elevated, contorted, gyrose and difform supporting a thickened and stout inflexed border which is distinctly brighter in color than the thallus. The spores are long-fusiform to long-ellipsoid, plurilocular and contain numerous spore cells, averaging from 14 to 20, mostly decolorate, $\frac{4.7}{8}$ - $\frac{6.4}{10}$ mic.

On barks in the mountains near Monterey, Mexico, Mr. C. G. Pringle, No. 119.

GRAPHIS LACTEA, (Nyl.) Thallus contiguous, diffuse, from smooth becoming furrowed and irregularly broken in minute fissures, pale ashy inclining to a delicate saffron color, limited and bordered by a distinct darkening hypothalline line. Apothecia irregular, difform, concave with raised borders, which are more or less white and mealy. Spores large, broadly ellipsoid, slightly curved, plurilocular, having about eight septæ, the apical cells larger, $\frac{3.9}{12}$ - $\frac{4.6}{13}$ mic.

On the bark of *Ilex*, San Luis Potosi, Mexico, Mr. C. G. Pringle, No. 210 (*Fissurina lactea*, Nyl.) A well-defined type of the section *Fissurina* which may be better developed in more equatorial regions.

GRAPHIS ANGUILLIFORMIS, Nyl. Thallus thin, generally diffused over large areas, smooth and shining and frequently broken by long transverse fissures, from white to ashy and darker. Apothecia simple, very numerous, from short gradually lengthening and bent in different directions, very conspicuous and elevated, black with a paler thalline border. Spores numerous spindle-shaped, plurilocular, decolorate, $\frac{5.4}{9}$ - $\frac{8.2}{12}$ mic.; spore cells from 14 to 20. Reaction with potash, yellow.

On barks San Luis Potosi, Mexico, Mr. C. G. Pringle, No. 166. The general appearance is not unlike some forms of *G. scripta*, to which it has been referred.

GRAPHIS PERALBIDA, Nyl. Thallus leprous, thinly attached

to the substratum, smoothish to somewhat granulate, whitish to a pale ashy gray, more or less orbicular, thinning out and becoming paler at the circumference. Apothecia wavy and elevated irregular and coalescing, disappearing finally into the general crust. Spores broadly ellipsoid, muriform, decolorate, monospermous in the thekes, $\frac{4.6}{1.3} - \frac{4.8}{1.5}$ mic.

On various barks San Luis Potosi, Mexico. Mr. C. G. Pringle, No. 222. A tropical *Graphis*, but well represented by the Mexican type.

GRAPHIS SUBELEGANS, Nyl. Thallus very thin, contiguous, marked by a broad crenulate brown hypothalline band, smooth, becoming somewhat roughened in age, from pale fuscous to a yellow olivaceous color. Apothecia elevated, well defined, difform, often occurring in stellate clusters, from brown becoming black and covered with a more or less delicate paler bloom. Spores ellipsoid to ovoid, muriform, pale yellow, $\frac{2.9}{1.1} - \frac{3.6}{1.2}$ mic.

On various close barks, San Luis Potosi, Mexico, Mr. C. G. Pringle, No. 162. A very beautiful species which is not likely to be confounded with any other.

GRAPHIS COMMA, Ach. Thallus somewhat leprous, diffused, circumscribed and limited by a well-defined brown, waving line indicated by the hypothallus, smooth, shining, from a dull white to an ashy leaden gray. Apothecia very short, small and comma-like, from straight becoming slightly curved, black. Spores plurilocular, fusiform, frequently bent, the spore-cells ranging from 10 to 13, decolorate, $\frac{3.8}{3} - \frac{4.0}{5}$ mic.

A very well-pronounced species suggesting an *Opegrapha*, occurring on *Ilex* at Jacksonville, Florida. Mr. W. W. Calkins, No. 216.

GRAPHIS BALBISINA, Nyl. Thallus adnate, leprous, diffused, marked by conspicuous serpentine ridges which divide the crust into segments but do not form areoles, from pale passing into an ashy or dull gray. Apothecia at first innate but becoming elevated, from short and simple advancing into irregular forms, anastomosing with branched divisions paler than the thalline structure. Spores long, fusiform, plurilocular; spore cells 12 to 14, decolorate; $\frac{2.9}{6.2} - \frac{3.2}{7.2}$ mic.

A very beautiful *Graphis*, quite distinct and occurring on trunks in the mountains near Monterey, Mexico, Mr. C. G. Pringle, No. 118.